ABSTRACT OF THE DISCLOSURE

Provided are a composition for forming film which can form a porous film excelling in dielectric constant, adhesiveness, uniformity of the film, mechanical strength and having low hygroscopicity; the prous film and the method for manufacturing the same, and a high-performing and highly reliable semiconductor device comprising the porous film inside. More specifically, provided is a composition for forming porous film obtainable by hydrolysis and condensation, in an acidic or alkaline condition, of a mixture of 100 parts by weight of one or more compounds selected of the group consisting of hydrolysable silicon compounds represented by Formulas (1) and (2) and partially hydrolyzed and condensed products of the hydrolysable silicon compounds represented by Formulas (1) and (2), and 0.1 to 20 parts by weight of one or more cross-linking agents selected from the group consisting of structure-controlled cyclic or multi-branched oligomers represented by Formulas (3) to (8).

 $R^{1}_{a}SiZ^{1}_{4-a} (1)$ $R^{2}_{b}(Z^{2})_{3-b}Si-Y-Si(R^{3})_{c}Z^{3}_{3-c} (2)$ $[R^{4}(H)SiO]_{e}[R^{5}(Z^{4})SiO]_{f} (3)$ $(R^{6}SiO_{3/2})_{g}[R^{7}(H)SiO]_{h}[R^{8}(Z^{5})SiO]_{i} (4)$ $(HSiO_{3/2})_{j}(Z^{6}SiO_{3/2})_{k} (5)$ $[H(Me)_{2}SiO_{1/2}]_{L}[Z^{7}(Me)_{2}SiO_{1/2}]_{m}(R^{9}SiO_{3/2})_{n}[R^{10}(Z^{8})SiO]_{o} (6)$